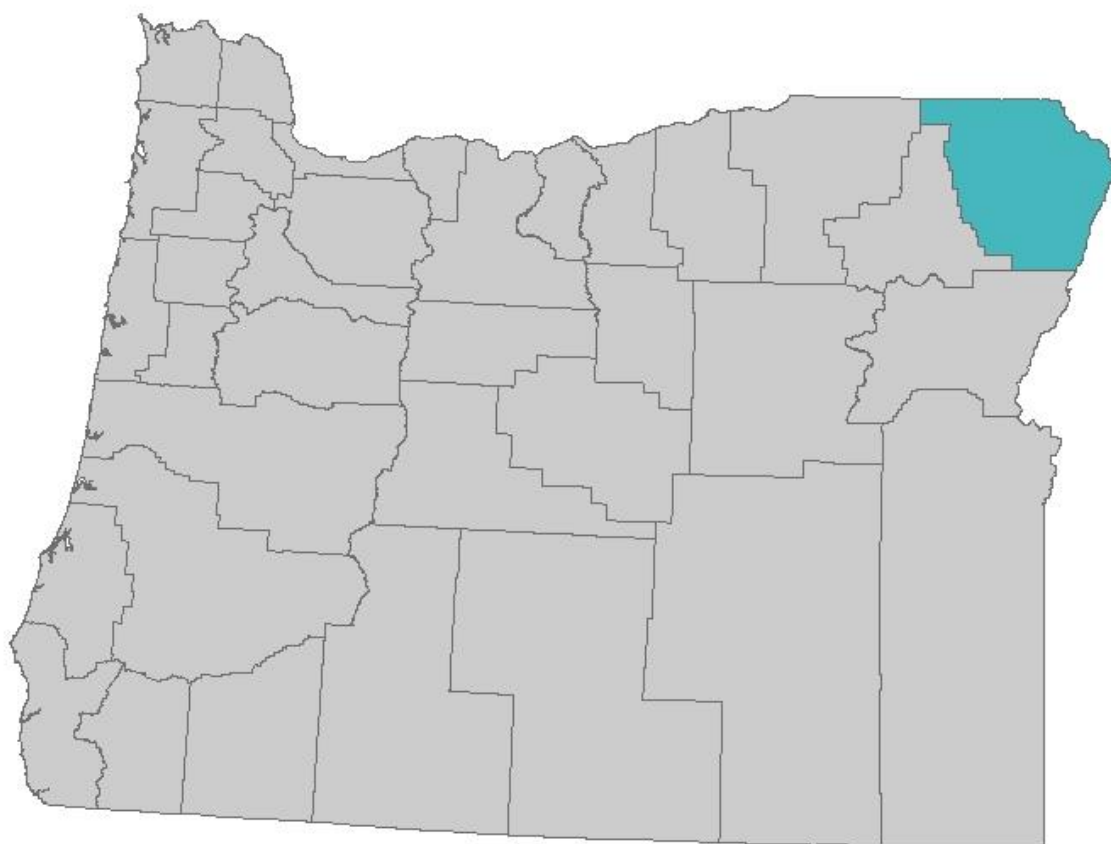


STRATEGIC APPROACH TO CONSERVATION

LONG RANGE STRATEGY

WALLOW COUNTY, OREGON

March 2017



NRCS Local Group Meeting

2/8/17 2:10 pm to 2:50 pm

Prairie Creek Center Conference Room

Present:

Abe Clark, NRCS	Nichole Andrews, FSA
Nate James, NRCS	Nathen Goodrich, USFS
Jacob Johansen, NRCS	Jeff Fields, TNC
Cynthia Warnock, Wallowa SWCD	Butch Tanzey, Forester
Lisa Mahon, Wallowa SWCD	Brandon Tanzey, Forester
David Bates, Water Resources	Kyle Petricine, Wallowa Resources, Community Solutions Inc.
Tim Cudmore, ODF	Kathleen Ackley, Wallowa Land Trust
Sarah Andersen, ODF& ODFW	Aaron Maxell, Freshwater Trust
Paul Karvoski, Wallowa Co. Emergency	

Nate James, NRCS, began the meeting at 2:10 p.m. by welcoming everyone to the annual local work group meeting. He introduced Abe Clark the new District Conservationist. He said they will look at Farm Bill program expenditures from 2002 to the present, past/present projects, review the long range plan and look at the resource priorities by land use that were set last year and add any new ones.

Farm Bill 2002 to Present

Under the Farm Bill (2002-present) there has been 15 years for CSP, CSTP, EQIP and WHIP constituting a total of 382 contracts. Acres conservation was applied on was on 360,000 acres using over 16.9 million dollars for the on-the-ground projects. The following is the breakdown in each program:

- | | |
|----------------------------------|---|
| Conservation Security Program | <ul style="list-style-type: none">• Consisted of pest management, grazing management (deferred rest rotation) and precision ag technology (GPS guidance).• Spent 4.7 million on 42,291 acres |
| Conservation Stewardship Program | <ul style="list-style-type: none">• Consisted of grazing management (monitoring), pest management and precision ag technology (more soil health practices).• Spent 4.3 million on 207,000 acres |
| EQIP/WHIP | <ul style="list-style-type: none">• Consisted of irrigation efficiency, nutrient management, direct seed, stock water, cross fencing, precision ag technology and high tunnels, weed control.• Spent 7.9 million on 111,312 acres through 260 contracts.• Nate showed a map of all the applied EQIP practices which includes more forestry ground than in the past. |

For the 2002 Farm Bill practices were in the Bear Creek, Lostine, Lower Valley and Zumwalt (GRP) areas. Prairie Creek, Leap/Parsnip and the Moraine areas is where funding from the 2008 Farm Bill were focused on. The 2014 Farm Bill funding has and will be for Alder Slope forestry and irrigation.

Long Range Plan

The resource concerns that were identified last year and included in their long range plan that NRCS has focuses on water quantity, water quality, noxious weeds, soil erosion/soil health, forestland health, energy and riparian health. Nate asked if anyone had something else to add to this. Jeff Fields asked if there were any on-farm programs for the

improvement of habitats on farm ground. Nate said there were no specific practices for this, however on a national level they are working toward creating some practices that would address this.

2016 Resource Concerns by Landuse

Forest Land Health (wildfire pest & disease)

1st Priority Concern – Wildfire Hazard

In 2012, NRCS began working with USFS on thinning on Alder Slope. This practice moved over to Mount Howard – Ferguson Ridge area. There is 6200 acres of non industrial forest under 134 different landowners. In 2015 there were 986 acres contracted for \$360,000 and 500 acres of this was completed. In 2016, 500 acres was contracted, and for 2017 and 18 the target acreage is 800 and 500 respectfully, There has been 130 acres out of 136 treated under an OWEB grant and Nathen said the USFS has treated 100 acres.

Abe said that he will be focusing on the Divide area and working with the USFS on thinning in this area. Then in 5 years both agencies are hoping to move down to the Lower Valley and treat forestry stands there.

2nd Priority Concern – Noxious weed

Under the last Farm Bill, NRCS cost-shared for weed control in the Parsnip Creek area (Leafy Spurge) and on the Moraine for Meadow Hawkweed, but did not do much in this area because the county weed program is active in helping landowners. Weed control is mostly addressed through CSP.

Rangeland/Pasture

1st Priority Concern was noxious weeds such as juniper and herbaceous weeds. Juniper control in the Lower Valley has been an issue. Wallowa County has Rocky Mountain Juniper where there is no documentation or data to support that it is an invasive species like the Western Juniper is.

2nd Priority Concern was the water quality/riparian habitat with the priority areas being Prairie Creek and tributaries of the Wallowa River. Lance did GPS the cut banks in Prairie Creek. It was thought that some woody material could be cabled in to help repair these banks.

Cropland

1st Priority Concern is irrigation efficiency with Alder Slope as the priority area followed by Wallowa Lake Irrigation Modernization Project. The Wallowa SWCD received an RCPP grant to work on 3 pipelines in the Alder Slope area. Many of the on-farm improvements have been or will be completed in 2017.

An RCPP application will be submitted for the Wallowa Lake Irrigation modernization Project for 2018-2022 funding.

2nd Priority Concern is Soil Health which is really county wide. There are farmers experimenting on this with crop rotations, monitoring etc. CSP seems to be the fit to address this and it is a program available county wide.

Easement & Irrigation

Wallowa Land Trust, TNC and Wallowa Resources were awarded an RCPP for easement on ag lands and some irrigation improvements to address soil health and conservation of wildlife habitat. Jeff thought they would have 4-5 easements and 1000 acres of irrigation improvements.

How Can NRCS Help?

Nate asked what some resource concerns that others had, and could NRCS help. Tim said he appreciated the help on Alder Slope with the thinning. The one concern he had was the juniper encroachment and the fire hazard it created. Butch said in most of the juniper sites there is also infestations of medusa head. This combination doesn't make the land productive. In some of these areas it is hard to treat the stands with equipment and not hurt other resources. Fire would help in the eradication of both juniper and the medusa head, but if it got too hot then the soil would be compromised. Nate asked if a lot of the juniper could be eliminated. Butch said on the flatter lands yes, but on slopes steeper than 60% it would be hard. Butch said it would help if there was a market for Juniper or there was a place it could go. It was discussed using the juniper in the Prairie Creek cut banks. This would work great and be a win win in both sites.

Jeff asked if NRCS could pay for re-seeding and Nate said yes they could.

Aaron said looking Wallowa Lake water and how it affects the lower valley would be beneficial. David Bates said appreciates NRCS letting him know of the irrigation projects so he can look at the water rights etc. before the project is implemented. Tim said to keep in mind that prescribed fire is a good tool to be used in fire fuel reduction and is not as costly as mechanical thinning. There is an issue about liability, but this will work in a dry Ponderosa Pine site. Nathan said they are looking at 4000 acres of burning in the Cold Canal area. Have to realize with burning there will be some live trees lost.

Kathleen asked if there was any NRCS practices for creating bio-char. Nate said that they are looking at this nationally and trying to develop the technical specifications for it and practice schedule payments etc. This was also mentioned by the Umatilla working group. There is funding in CSP for creating bio char.

Jacob introduced himself as the new NRCS employee in the Enterprise office since not everyone knew him.

With no more, Nate thanked everyone for attending and for their input.

Section I Introduction

Wallowa county is located in the northeast corner of Oregon. It is 3,153 square miles of topographic and biological diversity. North America's deepest gorge, Hells Canyon, bounds the east side; the Grande Ronde River, most of which is outside the county, fringes the west and Washington State is the northern boundary. The southern boundary runs through the Eagle Cap Wilderness. The county is renowned for the Wallowa Mountains, a range with peaks rising to slightly more than 10,000 feet in the south of the county. The Wallows are broadly considered part of the Blue Mountains, and contain the highest peaks in the geologic crustal upwarp known as the Blue Mountains anticlinorium.

There are two major drainages in the county, the Grande Ronde which passes through the northwest corner of the county and the Imnaha which enters the Snake River on the east side of the county. Major tributaries of the Grande Ronde River include: the Wallowa River (including Prairie Creek, Hurricane Creek, the Lostine River, Bear Creek and the Minam River), the Wenaha River, and Joseph Creek. The major tributary to the Imnaha River is Big Sheep Creek.

Wallowa County is under the influence of Pacific winds but is within the rain shadow of the Cascades Mountains to the west. Because of the large elevation difference within the county, about 1300 feet above mean sea level to more than 10,000 feet, average annual precipitation varies from about 8 to 60 inches. Annual variation in precipitation is also great, e.g. annual precipitation at Enterprise has varied

from about 7.7 inches to over 19 inches. Low elevations are characterized by hot, dry summers while higher elevations are characterized by cold, wet winters.

The 2007 census indicates that 7,130 people live in Wallowa County. Over half of the population live in the communities of Enterprise, Joseph, Wallowa and Lostine. The economy is based on natural resources, including tourism drawn to the area because of the diverse natural resources.

Wallowa County includes portions of three Federally designated wilderness areas and large amounts of other publicly owned land. About 65 percent of the land is publicly owned and most of that is in Federal ownership, including National Forests managed by the U.S. Forest Service and other lands managed by the Bureau of Land Management. The remaining land in the County is in private ownership. Timber and grazing are the largest land uses; about 48 percent of the total land base is forested.

Settlers moved into Wallowa County in the early 1870's. They came from the Grande Ronde Valley in search of grazing land for horses and cattle. Because of the harshness of the climate and the areas remoteness settlement was slow but steady. Early homesteaders were hardly more than subsistence farmers. The kinds of crops that could be grown was limited by the short growing season, and trade was limited by the fact that everything coming into or going out of the area had to be packed by horses or carried by the homesteaders. Livestock, mainly horses, sheep and cattle, were raised and herded to markets north or west of the area. The first road into the valley was built in 1879. It extended from the Grande Ronde Valley to near the present-day town of Elgin. Construction of a railroad from the same area was begun in 1905 and completed 4 years later. The availability of faster and easier transportation and freight service brought more settlers to the area and resulted in many changes in agriculture.

Livestock production has always been the backbone of agriculture in the county. The limited grain grown, mostly wheat, oats, and barley, was used as livestock feed and for flour for local use. After the railroad was completed, farm equipment became more readily available and more grain could be produced and harvested. As a result, the dairy industry flourished from about World War I until after World War II, in the 1950's. Almost every farm raised milk cows. The cream from the milk was sent to market, and the skim milk was used as feed for pigs. The cream was processed into butter or cheese. Much of the cream was processed at creameries in the county, but a considerable quantity was shipped by rail to Portland. As recently as the 1950's, several creameries in the county were producing high quality cheddar and Swiss cheese. By 1965, all of the creameries in the county were closed and only two commercial dairy farms remained. Whole milk was shipped out for processing for a few years, but then dairy cattle were replaced with beef cattle. For a while in the 1920's, Wallowa County marketed more hogs than any other county in the United States. Because of the wide dispersal of farms and the geographic landforms of the county, a hog drive became a common interesting and somewhat unique event. Farmers in areas such as Promise, Paradise, Flora, and Zumwalt would get together and assemble herds of hogs ready for market and drive them to the railroad in Wallowa and Enterprise. When the number of dairy cattle declined, the number of hogs also declined. By the 1970's, few hogs were being raised in the county.

World War II brought major changes in agriculture in the county. Many young people went to war, which created a shortage of labor. Many of them returned after the war, but many also went to college and pursued careers other than farming. Power equipment was more readily available after the war, and machinery replaced hand labor. With machinery, more crops could be produced and harvested in less time.

Grain production has grown in importance over the years. Wheat is the most commonly grown with barley next and some oats. Most of the wheat is shipped to markets in Portland. Most of the barley and oats is used as feed for livestock. Most of the grain is grown in nonirrigated areas, but several thousand acres of irrigated wheat is grown each year as part of a crop rotation or as a cleanup crop.

Other crops have been grown over the years with limited success. Dry peas have also been grown in rotation with wheat. Seed potatoes were grown in the 1970's because the isolated area was beneficial. A few hundred acres still are grown each year. White Dutch clover was grown for seed in rotations in the Flora and Paradise area for many years. A few small fruit orchards are along the Imnaha River. The fruit is for local use only.

Present Day

Livestock is still an important component of the agriculture community. Most of the large sheep herds are gone, the results of economics and closure of public grazing allotments to sheep to prevent interaction with big horn sheep. Cattle and recreational horses are dominant livestock types in the area. Grazing occurs throughout the county on both public and private lands.

Nonirrigated cropland is used mainly for winter wheat, spring barley, spring wheat, and hay. Irrigated cropland is used mainly for hay, pasture, winter wheat, spring wheat, and spring barley. Sprinkler and flood irrigation systems are most common. Irrigated alfalfa hay production averages 4 to 6 tons per acre. Timothy hay has become an important forage crop, with nearly all being sold outside of the county.

Section II Natural Resource Inventory:

Wallowa County Land Area: 3,153 square miles

Wallowa County Climate

A mountain range encircles the more populated centers of the county; protecting the valleys from severe weather impacts of regional storms. Summers are warm and pleasant. Extreme temperatures in the high 90°-100°'s are typical for short periods in late July and August. The major portion of precipitation emerges in late spring and fall. Light snow can be expected in the valleys by late November and recurs periodically until April. Brief heavy snow may occur in the valleys from November to February. Generally, heavy snow occurs at the higher elevations; which produce snow packs that often remain year around on high mountain peaks of the Eagle Cap Wilderness.

Source: George Taylor, State Climatologists & Cadd Hale & Sarah Joos, Publication Assistants

General Demographics

Wallowa County land area in square miles 3,153
Population (2007) 7,130
Population density (persons per square mile) 2.3
Population percent of the State 0.2%

Source: PSU, Population Research Center & Oregon Employment Department

Population Characteristics (2006)

Population	
White – European population	97.4%
Hispanic population	2.1 %
American Indian/Alaskan Native Population	0.8%
Black American population	0.01%
Asian population	0.3%
Other two or more races	1.4%

LAND USE

Wallowa County Land Ownership	ACRES
Private	863,739
Federal	1,132,641
State	14,868
Total	2,011,248

Farm Statistics	
Number of Farms	526
Farm Acres	527,975
Male Operators	437
Female Operators	89
Spanish Operators	4
American Indian Operators	5
Asian Operators	No data
Black Operators	No Data
White Operators	521

2007 Census of Agriculture

PRIVATE LAND USE	ACRES
Cropland	46,924
Forest	276,406
Pasture	24,329
Conservation Programs	22,164
Open Water	632
Rangeland	490,963
Wetlands	2321
Total	863,739

Contracts on lands enrolled in the Conservation Reserve Program started to expire in 2010. The expiring lands were initially considered a resource concern, however most of the expiring lands were re-enrolled in the CRP program. Lands enrolled in the program that have been determined Highly Erodible will require a conservation plan in order to remain in compliance with the 1985 Food Security Act, if they do not re-enroll in the CRP program. The table below depicts the year contracts expire, the number of acres in contracts and the number of acres that are highly erodible.

CONSERVATION RESERVE PROGRAM EXPIRATION DATE	ACRES	HIGHLY ERODIBLE ACRES
2014	233	144
2015	2781	945
2016	902	210
2017-2023	8000	6000
2027-2029	7300	4900

SOILS	ACRES
Prime and Unique	57,520
Statewide Importance	638,053

COMMON RESOURCE AREAS	NAME
43c	Blue and Seven Devil Mountains
9	Palouse and Nez Perce Prairies

WATERSHEDS AND STREAMS

There are 30 ten digit Hydrologic Unit Codes in Wallowa County. The locations, names and acreage are shown on the attached map.

There are 4 major drainages in Wallowa County, Grande Ronde, Wallowa River, Joseph Creek, and Imnaha Rivers. The Wallowa and Joseph Creek watersheds provide water to the Grande Ronde which eventually joins the Snake River. The Imnaha River flows into the Snake River. All of these watersheds provide habitat for a variety of fish species, including T&E species such as steelhead, Chinook salmon and Bull Trout.

The Grande Ronde and Imnaha river subbasins were historically important producers of anadromous fish. The Wallowa County portion of the Grande Ronde subbasin produced spring, summer, and fall Chinook, sockeye, coho, and summer steelhead, whereas the Imnaha subbasin produced Chinook, coho, and steelhead. Sockeye and Coho are now extinct. The remaining populations are at depressed levels when compared to historical levels.

The major causes of the loss of anadromous fish production in Wallowa county are: habitat destruction caused by water diversions from streams, low late season instream flows, high late season water temperatures and fish passage barriers.

IRRIGATED LANDS	ACRES
Cropland	31,083
Pastureland	13,692

The majority of water for irrigation relies upon natural streamflow. Less than 1000 acres of irrigated land derive their water from wells. The diversion of water for irrigation can impact instream flows during August and September, causing fish passage issues. The Wallowa River system has the greatest number of irrigated acres in the county. Wallowa Lake Dam could potentially store approximately 51,000 ac/ft of water for irrigation use. Dam safety issues restricts the storage to approximately 44,000 ac/ft.

Waterbodies listed as “Water Quality Limited” on DEQ’s 2004/06 303(d) list.

See attached spreadsheet

Wildlife Conservation Opportunity Areas

There are 6 Wildlife Conservation Opportunity areas identified in Wallowa County by ODF&W. A description of all 6 are available at the following site:

<http://nrimp.dfw.state.or.us/website/coaexplorer/viewer.htm>

The areas listed below affect private lands in Wallowa County

BM-21. Lower Grande Ronde

Area follows the Grande Ronde River from the Oregon border to its in-tersection with the Wallowa River, then up the Wallowa to Highway 82.

BM-22. Wallowa River

BM-25. Zumwalt Prairie Plateau

Located on the eastern edge of the ecoregion northeast of Enterprise and Joseph, the area encompasses the grasslands on the plateau.

Section III Natural Resources Analysis:

In 1992 a committee consisting of Wallowa County citizens, agency professionals, and the Nez Perce Tribe was established to prepare a salmon recovery plan. The development of this plan was prompted by the May 22, 1992 listing of Snake River Chinook salmon as threatened under the Endangered Species Act (ESA). In 1998 this plan was expanded into a multi species plan. The mission of the plan is:

To develop a management plan and a multi-species strategy to assure that watershed conditions in Wallowa County provide habitat necessary for salmonids and other vertebrate species occurring in Wallowa County by protecting and enhancing conditions as needed. The plan will provide the best watershed conditions available consistent with the needs of the people of Wallowa County, the Nez Perce Tribe and the rest of the United States and is made an integral part of the Wallowa County comprehensive land use plan.

Following the completion of the Salmon Habitat Recovery Plan, the county commissioners created a Natural Resource Advisory Committee consisting of local citizens, members of state and federal agencies, private landowners, timber and grazing interests, environmental interests and the Nez Perce Tribe. The committee's purpose is to provide guidance to the county commissioners on resource issues within Wallowa County. The commissioners also created a Natural Resource Technical Advisory Committee. The committee members include representatives from County, State and Federal government, and private industry. The technical committee meets every month and reviews resource related projects proposed within the county.

Since the completion of the Wallowa County Salmon Recovery Plan and the formation of the various committees partnerships in the county have completed or initiated the following:

Watershed Assessments/Action Plans/Coordinated Resource Management Plans:

Big Sheep Creek CRMP

Little Sheep Creek CRMP

Bear Creek Action Plan

Lostine River Watershed Assessment

Upper Joseph Creek Watershed Assessment

Lower Joseph Creek Watershed Assessment

Prairie Creek Watershed Assessment

Numerous Practices have been installed to address fish passage issues, to improve water quality, soil quality on cropland, pastureland and rangeland, including:

- Construction of 6 permanent diversion structures in the Wallowa and Lostine rivers replacing annual push up dams

- Replacement of road culverts with bridges or bottomless arch pipes

- 3 miles of constructed stream meanders on the Wallowa River

- 4 miles of instream structures to improve fish passage in Bear Creek

- Conversion of 1500 acres of land flood irrigated to sprinklers in the Lostine Watershed helping to improve instream flows.

- Nutrient management on 14,000 acres of cropland

- Pest management on 10,000 acres of cropland

- Introduction of GPS guided equipment for the application of nutrients and pesticides.

- Grazing management plans on 60,000 acres of rangeland since 2004

- Installation of livestock watering facilities on over 20,000 acres of rangeland

Improvements in irrigation practices is still needed throughout the Wallowa River valley. Opportunities exist to improve water delivery from surface water sources, such as eliminating earthen delivery ditches in Lostine and Bear Creek. Improve water distribution in Prairie Creek, potentially improving flows in the Wallowa River and decreasing sediment output of Prairie Creek by reducing instream flows.

Rangeland is the largest private landuse in the county. They are critical to the sustainability of the ranching community and also provide critical wildlife habitat. Rangelands throughout the county are under pressure from invasive species. In many instances vegetative management is necessary to control the spread of invasive species in conjunction with grazing management.

Livestock grazed on the counties rangeland are either wintered in the Wallowa Valley or taken out of the county during the winter months. Historically, livestock that were wintered in the valley were fed on grass pastures/hayfields or confined in feedlots. The winter feeding areas were located in areas adjacent to open water sources. The proximity of livestock to streams and open ditches resulted in water quality impacts. Landowners have been active to provide off stream water sources for wintering livestock, installing fencing to control livestock access to riparian areas. In confined feeding areas, manure is mounded during the summer or early fall to provide loafing areas for confined livestock. These mounds contain thousands of pounds of organic waste that during rain on snow events may contribute to water quality issues.

22,000 acres of cropland are currently enrolled in the Conservation Reserve Program. Approximately 6,600 acres of those lands are classified as Highly erodible and will require new conservation plans if they are no longer enrolled in CRP. The lands re-enrolled in CRP will provide much higher quality habitat than what existed for the previous 20 years on the land that was re seeded. The focus will be on utilizing management practices to maintain the quality of habitat for Mule deer and sharp-tailed grouse on the newly seeded CRP stands.

A majority of the private forestland in the county are industrial. The non industrial private forestlands need to be managed to reduce fuel loads and improve stand structure. Oregon Department of Forestry has provided funding for thinning projects in the past.

RESOURCE CONCERNS

Water Quantity: Water quantity is the dominate resource concern facing the county. The majority water used for irrigation is derived from surface water sources. Efforts need to continue to improve irrigation efficiencies. The Prairie Creek area, one of 7 irrigated areas in the county, has approximately 15,000 irrigated acres. This area has been locally identified as an area to focus water conservation efforts for the next several years. Prairie Creek irrigators divert water from the Wallowa River via storage in Wallowa Lake. Earthen canals are used to deliver water to the valley, where numerous spur ditches feed pumps used for sprinkler irrigation. Excess water conveyed in the spur ditches is returned to Prairie Creek, creating water quality problems. Improved management of water in Prairie Creek will improve flows in the upper Wallowa River system between Joseph and Enterprise. Benefits in water quality can also be derived.

Along with improved delivery systems, irrigation water management is also needed on existing sprinkler systems. When the sprinkler irrigation systems were developed in the late 60's and early 70's they were used to apply water to deep rooted forage and annual grain crops. Today, a variety of crops are being grown including Timothy for hay. Timothy is a shallow rooted crop being irrigated with the same systems, and nozzle sizes used for deep rooted crops. This results in the application of water beyond the needs of the crop. Incentives focusing on Irrigation Water Management principles will also result in water savings.

Energy: The rising cost of energy has been identified as one of the biggest threats to irrigated agriculture in the valley. The average annual cost of irrigation is approximately \$50.00 per acre. Increases in energy costs with stable commodity prices will reduce the economic viability of irrigated agriculture. Local growers have identified improved water delivery systems, providing gravity pressure as a means to eliminate the need for pumps. The planned water delivery system improvements in Prairie will also reduce energy consumption. In most applications, the piped delivery of water will reduce pump size. This was demonstrated in the CCPI projects completed in 2010. The gravity pressure gained via the piped delivery of water eliminated 50 horsepower of energy demand.

Water quality: Significant improvements in the quality of surface water in the county has occurred over the last 20 years. Feedlots have been improved to distance the lots from surface water sources. However, many of the lots are still located in close proximity to streams and ditches. There is a need to treat annual manure accumulations in feedlots to prevent surface runoff in a rain on snow events. Manure in the feedlots is mounded each year for livestock loafing areas. The mounding process results in the manure being mixed with large cobbles, making the manure undesirable for application on crop fields. Incentives are needed to encourage treatment of the manure to separate the manure from the rocks so the manure can be applied to crop fields.

Soil Erosion: Most of the soil erosion occurs on dryland cropland. The adaption of direct seeding systems has significantly reduced erosion on annual tilled lands. Enrollment of lands into the CRP program has also helped. Those lands that are not reenrolled into the program and returned to annual crop production will need technical assistance to remain in compliance with Highly Erodible Land requirements.

Soil Health: Improving soil health was listed as a secondary priority resource concern on cropland. Increasing organic matter, microbial activity, and infiltration rates are local goals. Minimizing tillage, keeping soil covered, keeping living roots throughout the year, and increasing crop diversity can improve soil health and reduce inputs such as herbicide and fertilizer rates.

Farmland/Habitat Fragmentation: Highly productive irrigated farmland and Native Rangeland continues to be reduced to smaller ranchette size properties or managed as recreational property. It will be vital for Ag production and the Ag culture of Wallowa County to prevent the continued fragmentation of family farm sized operations and the retirement of large blocks of Native rangelands to primarily recreation.

Noxious weeds: There are multiple noxious weeds species present throughout Wallowa County on all landuses. The Wallowa County Comprehensive Weed Management plan was just updated in 2013. The plan was a collaborative effort by a multi discipline team giving priority to treatment of specific species and locations of infestations. The local work group identified juniper and other herbaceous weeds identified in the county weed management plan as the top priority on rangelands and a secondary priority on forestland.

Riparian Habitat: There are multiple salmonid bearing streams in the county with poor quality herbaceous and limited woody species. Prairie Creek and other tributaries to the Wallowa River were identified as top priorities by the local workgroup to improve riparian habitat on pastureland. Riparian habitat is important for fish as well as the 90% of terrestrial species that utilize riparian areas for at least a portion of their lifecycle.

Section IV. Natural Resource Problems and Desired Future Outcomes

Water Quantity and Quality

What is the severity of the problem?

The Grande Ronde River, Wallowa River, Joseph Creek, and the Imnaha River are the four major watersheds in Wallowa County. All of these drainages provide habitat for a variety of fish species, including T&E species such as Steelhead, Chinook salmon and Bull Trout.

Diversion of water for irrigation has been identified as impacting instream habitat. The major decrease, and even loss, of fish species are due to the habitat destruction caused by water diversions from streams. Water is diverted from streams mainly for irrigation purposes on the 31,000 acres of irrigated farmland and 14,000 acres of irrigated pastureland in Wallowa County. Water for the majority of the irrigated acres are drawn from surface water; there are few pumped wells. There is room for major improvement in water quantity and quality by improving irrigation efficiencies within the county. Approximately 80 percent of acres utilize outdated and inefficient pumps and systems. Landowners are willing to make improvements to their irrigation system, but the initial cost is a deterrent. Improvements will reduce operating costs, labor and water use.

Crop rotations can also impact water quantity. Timothy hay is being grown on approximately 2,500 acres in the county. Wheel lines and center pivots designed for irrigating crops such as alfalfa and small grains are now used to irrigate timothy. Alfalfa and grains with their deep rooting depths of 3 feet or more, utilize a greater amount of the soil profile to meet water and nutrient needs. Use of the same systems on timothy, with a 12 inch root zone, result in the over application of irrigation water.

Additional water quality issues include the need for livestock management plans. The degradation of riparian areas is often associated with overgrazing and additional action is needed to control grazing in riparian areas. Riparian work will also benefit fish habitat. Increasing instream flows through irrigation updates will also improve water quality. In confined feeding areas, manure is mounded during the summer or early fall to provide loafing areas for confined livestock. These mounds contain thousands of pounds of organic waste that may contribute to water quality issues during rain or snow events.

Who is willing to help with this problem?

The Wallowa Soil and Water Conservation District, the Oregon Watershed Enhancement Board, Grand Ronde Model Watershed, ditch companies, multiple Coordinated Resource Management Plans, and Watershed Assessment groups are all possible partners to help the NRCS improve water quality and quantity.

Resource Trends

There has been an improvement in water quality in the streams in Wallowa County in recent years. Areas throughout the county have had multiple water conservation practices, grazing management, tree and shrub plantings implemented during the past 20 years.

In the Lostine Watershed, 1,500 acres of flood irrigated land was converted to sprinklers to help improve in-stream flows. Improvements on irrigation practices are still needed throughout the Wallowa River Valley.

Numerous practices have also been installed to address fish passage issues such as the replacement of road culverts with bridges or bottomless arch pipes, three miles of constructed stream meanders on the Wallowa River, and four miles of in-stream structures in Bear Creek.

What are the goals?

- Improve water quality and quantity in the county
- Improve riparian areas
- Improve fish habitat

Education and outreach is needed to inform landowners of established water rights and methods to measure water use. Also, irrigation effects on fish need to be reiterated to landowners to promote the importance of irrigation efficiency. Incentives are also needed to encourage implementation of practices that will improve irrigation efficiency. There are hundreds of miles of earthen delivery ditches and thousands of acres of flood irrigated land needing treatment.

Water quality can also be improved by encouraging livestock operators to reduce the accumulation of animal wastes in winter feeding areas. Utilizing the manure on cropland and pastures will reduce the potential impact of rain on snow events transporting the mounded manure to local waterways. There are approximately 20 winter feeding areas in the county that would benefit from a system that would enable the manure to be utilized, replacing dependence on commercial fertilizers.

How much funding is needed?

To cover the cost of the cost-share assistance programs for irrigation efficiency and the riparian work for water quality and quantity, about \$350,000 would be needed annually from the NRCS to treat 1,000 acres.

Rangeland/Weeds

What is the severity of the problem?

Rangeland is the largest private land use in the county with approximately 460,000 acres. Rangeland is critical to the sustainability of the ranching community and also provides critical wildlife habitat. Rangeland throughout the county is under pressure from invasive species such as cheatgrass,

medusahead rye, yellow-star thistle, toadflax, skeleton weed, ventanata, etc. In many instances, forage management is necessary to control the spread of invasive species in conjunction with grazing management.

Livestock grazed on the county's rangeland are wintered in the lower elevations or taken out of the county during the winter months. Historically, livestock that were wintered in the valley were fed on grass pastures/hayfields or confined in feedlots. The winter feeding areas were located in areas adjacent to open water sources. The close proximity of livestock to streams and open ditches resulted in water quality impacts. Landowners have been active to provide off-stream water sources for wintering livestock, and installing fencing to control access to riparian areas.

Who is willing to help with this problem?

The Tri-County Weed Association, Oregon Watershed Enhancement Board, Wallowa County Soil and Water Conservation District, Wallowa County Vegetation Department, Wallowa Resources, and Oregon State University-Extension are all able and willing agencies to partner with the NRCS to improve rangeland health.

Resource Trends

This problem has continually increased in past years. Groups such as Wallowa Resources, Tri County Weeds and Wallowa County Vegetation Department have been working with many landowners offering incentives for weed control. Trials are ongoing to assess the best practices for weed treatment, type of chemicals and establishment of desirable vegetation.

What are the goals?

- Improve rangeland health
- Control invasive species to restore wildlife habitat

It is feasible to expect to treat 500-1,000 acres per year and the NRCS estimates that 20 percent of rangeland acres need treatment. Outreach is needed to educate the private landowners on the cost-share assistance programs available through the NRCS to assist the landowner with finances as that is the main hurdle. Local partners will also put on weed workshops to educate on the most efficient ways to reduce invasive species.

How much funding is needed?

Initially, \$20,000-30,000 will be needed annually. As interest grows that number may increase or decrease, depending on the amount of landowner interest and the ability of the private landowners to independently finance rangeland health restoration practices.

Forestland Health

What is the severity of the problem?

Forestland in Wallowa County needs to be managed to reduce fuel loads and improve stand structure. Overstocked stands are increasing the susceptibility for catastrophic wildfires and a composition problem is resulting in white fir and lodge pole encroaching into ponderosa pine. Wildlife habitat is declining as stands thicken and deadfall accumulates.

The Oregon Department of Forestry has provided funding for thinning projects in the past but more work is needed to make an impact on the forest condition as there are 260,000 acres of private, non-industrial forestland, of which 80 percent is in need of treatment.

Who is willing to help with this problem?

The Oregon Department of Forestry, Wallowa Soil and Water Conservation District, United States Forest Service, Farm Service Agency, and the Oregon State University-Extension are all willing and able agencies to partner with the NRCS to improve forestland health.

Resource Trends

The acreage of overstocked stands continues to increase. Pests, disease problems and fire hazards threaten the entire forestland community. The current economical state, the low prices and demand for timber products, prevents landowners from economically treating the problem. Thinning costs are high and funds to recover the costs will not be generated from timber harvest for years, thus there is no incentive for the landowner to manage their timber resources.

In the past, this has been an issue that the Oregon Department of Forestry has dealt with; however, state money is running low and the NRCS is able to offer some assistance.

What are the goals?

- Improve forestland health/reduce fuel loads

The NRCS and partners will focus on areas of the county identified in the Community Wildfire Protection Plan, these are fire prone areas, an urban/rural interface, or disease infested areas. The LWG priority for 2015-2019 is Alder slope. NRCS, SWCD, OWEB, ODF, USFS, Wallowa Resources and OSU extension are all committed to assisting in a coordinated approach to create a defensible buffer between public, private and un managed wilderness lands on Alder Slope. This coordinated approach will continue into the future based on priorities identified in the Wallowa County CWPP and LWG. See Alder Slope Forestry CIS for further details. Update: the last acres were contracted in 2017. We plan to move to the Divide area next, see Wallowa Front CIS.

How much funding is needed?

Treatment costs are approximately \$450 per acre. Over 80% of the counties 260,000 acres are in need of treatment. The first treatment unit will encompass 2,200 acres NIPF, 800 Acres IPF and approximately 600 acres of USFS lands in the Alder Slope priority area beginning in 2015.

Section V. Prioritization of Natural Resource Problems and Desired Outcomes

These are the Wallowa County Priorities Identified by the Local Work Group. See CIS' for desired outcomes.

Conversion of Ag lands to Non Ag uses is a priority Resource concern on all land uses See County Ranking

Cropland

Top Resource Concern: Water Quantity "Irrigation efficiency"

Priority Area

1. Alder Slope
2. Wallowa Lake System North Prairie Cr.

Secondary Resource Concern: Soil Health

1. County wide

Forestland

Top Resource Concern: Wildfire Hazard/Fuel loads

Priority Areas

1. Alder Slope
2. Divide Ferguson Ridge

Rangeland

Top Resource Concern: Noxious weeds

Priority

1. Juniper
2. Herbaceous weeds prioritized in Wallowa County Weed Management Plan

Pastureland

Top Resource Concern: Water quality/Riparian Habitat

Priority Area

1. Prairie Creek
2. Tributaries of the Wallowa River

NRCS is currently focusing farm bill funding on these Conservation Implementation Strategies:

Alder Slope Forestry CIS: 2015-2017

Alderslope Irrigation CIS: 2016-2017 RCPP Phase I & General EQIP phase II

Wallowa Front Forestry CIS: 2018-2022

Tri-County Forestry CIS: 2018-2020

WALLOWA COUNTY HUC 10 WATERSHEDS

